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## Brief report

## Impact of the first hand sanitizing relay world record on compliance with hand hygiene in a hospital



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## Key Words:

Health care–associated infections

Hand hygiene

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Staff of a large hospital in Hong Kong attempted and set the first Guinness World Record for the most participants in a hand sanitizing relay in May 2014. After this event, average compliance with hand hygiene increased from 72% (95% CI, 70%–74%) in 2013 to 85% (95% CI, 83%–87%) in June–July 2014, and the conceptual understanding of good hand hygiene practices improved.

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Since 2009, May 5 was declared the annual World Hand Hygiene (HH) Day by the World Health Organization (WHO).<sup>1</sup> Many institutions, regions, or countries arrange special promotional activities on this day as recommended in the WHO's guidelines.<sup>2</sup> In May 2014, Hong Kong Baptist Hospital (HKBH), a private 850-bed institution in Hong Kong, successfully broke the Guinness World Record (GWR) for the most participants in a hand sanitizing relay.<sup>3</sup> This is distinctly different from a previous world record for handwashing at the same time in large groups<sup>4</sup> because each HH action is performed instead by individuals in a relay, one at a time before witnesses to ensure compliance. After this event, HH compliance was found to increase significantly. This report is presented as a possible means to deal with HH campaign fatigue, which has been identified as a critical issue for HH promotion.<sup>5</sup>

A total of 277 staff from the hospital and nursing school staff pool of 2,200 participated during a total time of 1.5 hours. Each participant had to individually perform the 7-step HH procedure<sup>2</sup> and on completion pass the alcohol-based handrub to the next participant in the relay. As required by the GWR, rigorous validation



**Fig 1.** Photograph showing a row of nurses participating in the hand hygiene relay, the 2 official validating witnesses with their stopwatches, and a video camera recording each individual performance in the relay.

is mandatory, and this included 2 GWR-approved independent witnesses, one who was a senior expert in the field and the other a public notary.<sup>6</sup> Every individual HH performance was enacted before the 2 official witnesses who timed each HH action using a stopwatch and was recorded by video as required (Fig 1). The complete data set, including the signatures of all participants, was

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**Table 1**  
Responses to the postevent questionnaire distributed to all 277 participants in the Guinness World Record attempt

Survey item	n/N (%) <sup>a</sup>
1. Enhances my opinion regarding the hospital's commitment to hand hygiene (strongly agree/agree) <sup>†</sup>	251/255 (98)
2. Helps to build team spirit for improving HH practice in the hospital (strongly agree/agree) <sup>†</sup>	239/254 (94)
3. Helps me to understand better the 7-step procedure for proper HH using alcohol-based handrub (strongly agree/agree) <sup>†</sup>	251/255 (98)
4. Helps me to know how to ensure that friction is applied to all areas of the hands during handrubbing action (strongly agree/agree) <sup>†</sup>	248/255 (97)
5. Helps me to understand the proper indications for HH (strongly agree/agree) <sup>†</sup>	237/255 (93)
6. Helps me to enhance my compliance rate with HH practices (strongly agree/agree) <sup>†</sup>	237/252 (94)
7. My compliance with HH before participating in the world record program was... (excellent/good) <sup>‡</sup>	190/255 (75)
8. My compliance with HH after participating in the world record program is... (excellent/good) <sup>‡</sup>	251/253 (99)
9. Have you practiced the 7-step HH procedure before participating in the current program?	244/250 (98)
No. of practices: <5 times	68/242 (28)
No. of practices: 5–10 times	78/242 (32)
No. of practices: 10–15 times	49/242 (20)
No. of practices: >15 times	47/242 (19)

HH, hand hygiene.

<sup>a</sup>Nonresponses were excluded, leading to different denominators in some items.

<sup>†</sup>Response options were as follows: strongly agree, agree, disagree, strongly disagree, and no comment.

<sup>‡</sup>Response options were as follows: excellent, good, average, poor, and very poor.

submitted to the GWR office before the world record was approved and announced as validated 5 weeks after the event.

Before the event, 4 reminders were sent by e-mail to all staff and departments regarding this occasion together with HH educational material on the 7-step HH procedure.<sup>2</sup> Participants were informed that they would have to perform the 7 steps of HH properly under direct visual scrutiny of 2 senior public notaries. Managers were asked to relieve their staff on a voluntary basis for the event. All staff were told to practice the HH procedures and to contact the infection control unit for assistance if needed.

## POSTEVENT EVALUATION SURVEY

A questionnaire was sent to every participant immediately after the event; a total of 255 of 277 (92.1%) participants returned their questionnaire. The main results are shown in Table 1. More than 90% of the participants agreed that the event had helped to enhance their knowledge of correct HH practices. Based on self-assessment, 94% of participants agreed that the event helped to enhance their compliance, and 57% of respondents ranked themselves on a higher HH compliance level after the event. Finally, 70% indicated that they rehearsed the 7-step HH procedure >5 times before the actual event.

## AUDIT OF HH COMPLIANCE, 2012–2014

A total of 26 auditors, trained and validated ( $\kappa$  score for inter-rater correlation = 0.88) according to WHO protocol,<sup>7</sup> have been monitoring HH compliance since 2012 at HKBH. HH compliance was 83% (95% CI, 81%–85%) in 2012.<sup>5</sup> This fell to 72% (95% CI, 70%–74%) in 2013, but it went up to 85% (95% CI, 83%–87%) in June 2014 ( $P < .01$  compared with 2013) after the GWR event. Compliance in 2013 was lowest for doctors (44%), which is not unexpected,<sup>8</sup> compared with 84% for nurses and 73% for health care assistants. Compliance increased across staff categories after the event in 2014: doctors (64%), nurses (92%), and health care assistants (88%). The amount of alcohol-based handrub used is monitored hospital-wide at HKBH; it increased significantly from an average of 11.3 L per 1,000 patient days from June 2013–May 2014 to 15.3 and 18.4 L per 1,000 patient days in June and July 2014, respectively.

## DISCUSSION

A study was previously reported on effectively overcoming campaign fatigue in HH promotion, using a variety of methods

developed by hospital link nurses at HKBH.<sup>5</sup> Such activities were needed considering that, after initial marked improvement from 41% (95% CI, 34%–49%) in 2007 after the introduction of the WHO's HH multimodal promotion strategy, compliance with HH had remained stable at approximately 50% between 2008 and 2011 at HKBH.<sup>5</sup> It is evident that there is campaign fatigue to the usual elements of HH promotional strategies, such as posters, role models, reminders, and awards. After the implementation of the special link nurse program, the compliance rate increased to 83%.<sup>5</sup> In 2012, the hospital was awarded The Asia Pacific Hand Hygiene Excellence Award.<sup>9</sup> As recommended by the award's expert while auditing the hospital, a community project was organized in the surrounding schools and community center in 2013, but no special activities were organized in the hospital on the occasion of the WHO's World HH Day on May 5. These community events were well accepted, but HH compliance of the hospital dropped from 83% in 2012 to 72% in 2013. Therefore, the hospital thought the need to identify a novel strategy that the staff would be proud to participate in and would boost HH compliance.

A limitation of our study is the uncontrolled before-after design, and future studies could use controlled designs to determine the impact of these types of programs on HH compliance in hospitals.

It should be emphasized that breaking a world record is not the most important issue. Rather it is the ability of this exercise to enhance HH compliance and improve the HH concept of the staff that is the most vital. Such changes make the present exercise relevant to infection prevention and control. The next World HH Day in 2015 will be a historic seventh day, celebrating the 10-year anniversary of the WHO's Clean Care is Safer Care Program.<sup>10</sup> It is always easier to make a start, but to maintain the momentum and to strive for a higher goal can be difficult. Perhaps this idea of breaking a world record can be incorporated to stimulate all hospitals to further improve the practice of HH and thereby ensure safer care for all patients.

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